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Abstract

In conjunction with the Northeast Regional Research project NE 1020 “Multi-state Evaluation of Wine Grape Cultivars and Clones,” Iowa State University established a cold hardy wine grape cultivar trial in 2008 at the ISU Horticulture Research Station (HRS) and Tabor Home Vineyards and Winery (THV) near Baldwin, IA. The Iowa trial evaluates the performance of Corot noir, La Crescent, Marquette, Petit Amie, NY 95.0301- 01, MN-1189, MN-1200, MN-1220, MN- 1235, MN-1258, with Frontenac and St. Croix serving as controls. Similar plantings were established in SD, NE, and MO, as well as in CT, IN, KY, and MI. This report summarizes the results for the 2010 growing season.

Keywords

RFR A1052, Horticulture

Disciplines

Agricultural Science | Agriculture | Fruit Science | Horticulture

2008 NE 1020 Cold Hardy Wine Grape Cultivar Trial Performance in 2010

RFR-A1052

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Introduction

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Materials and Methods

The vines were spaced 8 × 10 ft apart (545 vines/acre) with three vines/replication. Treatments were replicated six times with three vines per plot at each site (18 vines/cultivar). Vines were trained to the high-wire bilateral cordon system with the trellis wire 6.0 ft above the ground.

Results and Discussion

During the 2009–10 winter, vines were exposed to significant freezes in early October, December, and January and a spring frost (Table 1). With considerable cane die-

back during the past two winters, pruning weights at both sites were low (Table 2). Differences in date of bud break and tolerance to a spring frost was evident at HRS. MN-1189 broke bud later than other Minnesota selections and cultivars. MN-1200, Marquette, MN-1237, and La Crescent exhibit some tolerance to spring frost. Few vines carried any crop at HRS, and vines at THV were only allowed to carry a cluster or two to observe fruit characteristics. Vines at THV received minimal sprays, and anthracnose and black rot were evident. Marquette and MN-1220 exhibited susceptibility to anthracnose, while Frontenac, MN-1200, and MN-1235 exhibited susceptibility to black rot.

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Table 1. Significant minimum temperatures (°F) recorded during the 2009–10 winter and accumulated growing degree days from May 1 to October 1, 2010.

Date	HRS	THV
Minimum temperatures (°F):		
Oct 10	24	22
Dec 10	-10	-10
Jan 2	-21	-18
May 9	29	30
Growing degree days (base 50°F, cap. 86°F):		
May 1 to Oct 1 ²	2,943	2,922 ^x
Departure from avg.	112	39
Days above 86°F	11	28

²From the ISU Ag Climate Network.

^xFrom the Cedar Rapids station.

Table 2. Vine mortality and pruning weight following the 2009 growing season, and growth characteristics during 2010 of 12 wine grape cultivars in the NE-1020 cold hardy cultivar trial at two locations in Iowa.

Rootstock	Horticulture Research Station				Tabor Home Vineyards			
	Vine mort.	Pruning wt (lb)	Bud Break (Julian D)	Frost rating ^y	Vine mort.	Pruning wt (lb)	% vines exhibiting	
							Anthr-acnose	Black rot
NY 95.0301-01 ^z	1	.06	.	.		.05	0	0
Corot noir	1	.16	114	5.0		.09	0	0
La Crescent		.48	106	3.8		.48	0	0
Marquette		.85	107	3.7		.44	50	17
Petit Amie		.18	111	4.7		.07	0	0
MN-1258 ^z		.06	107	.		.05	0	0
MN-1189		.29	112	5.0	1	.35	24	0
MN-1200		.27	108	3.4		.31	17	33
MN-1220		.85	108	4.1		.32	50	17
MN-1235		.49	106	3.7		.33	0	33
Frontenac		.81	106	4.5	1	.66	29	47
St. Croix		.57	108	4.8		.52	0	11
LSD .05		.17	1	.45		.15	20	19

^zPlanted in 2009.^yFrost injury rating scale: 1 = no injury; 2 = slight injury, some clusters killed; 3 = moderate injury, most clusters killed, most shoots alive; 4 = severe, all clusters killed, some shoots alive at the base; 5 = very severe, all shoots killed to the base.